Amendments to the Drawings:

Amendments to the drawings have previously been approved. Applicant files replacement formal drawings incorporating these changes.



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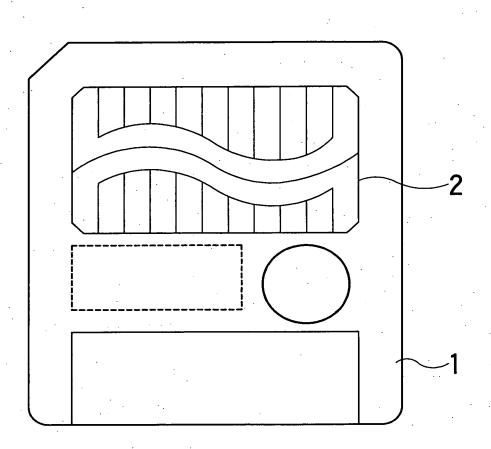


FIG.1 **PRIOR ART**



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	:	0 255	256 263
PHYSICAL	Page 0	DATA AREA (256BYTES)	REDUNDANT DIVISION (16BYTES)
BLOCK 0	Page 1		
	:		
	Page 15		·
PHYSICAL	Page 0		
BLOCK 1	Page 1		
	:		
	Page 15		
•	•	•	•
PHYSICAL	Page 0		
BL0CK 511	Page 1		
	:		
	Page 15		21/45

FIG.2 **PRIOR ART**



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•		
DUVCICAL	SECTOR 0	512 BYTES
PHYSICAL BLOCK	SECTOR 1	
0	:	4. °
	SECTOR 7	
DUVCICAL	SECTOR 8	
PHYSICAL BLOCK	SECTOR 9	
1		·.
	SECTOR 15	
•	• •	•
•	•	•
D11)/C1041	SECTOR 3992	
PHYSICAL BLOCK	SECTOR 3993	
499	:	
	SECTOR 3999	

FIG.3 PRIOR ART



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DATA DIVISION

BYTE	PAGE 0(EVEN PAGE)	PAGE 1 (ODD PAGE)
0~255	DATA Area-1	DATA Area-2

REDUNDANT DIVISION

_		
BYTE	EVEN PAGE	ODD PAGE
256		
257	User Data Area	ECC Area-2
258	USEI Dala Alea	
259	·	Block Address
260	Data Status Area	Area-2
261	Block Status Area	
262	Block Address	ECC Area-1
263	Area-1	

FIG. 4
PRIOR ART



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		0	511	512	<u>527</u>
PHYSICAL	Page 0	DATA AF	REA	REDUNDANT (16BY	DIVISION (TES)
BLOCK 0	Page 1				
	Page 15				
PHYSICAL BLOCK 1	Page 0				
	Page 1				
	:				
	Page 15				
•	•	•		•	
PHYSICAL	Page 0				
BL0CK 1023	Page 1				
	Page 15				,

FIG.5
PRIOR ART



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LOCICAL	SECTOR 0	512 BYTES
LOGICAL BLOCK	SECTOR 1	·
0		
	SECTOR 15	·
LOCICAL	SECTOR 16	
LOGICAL BLOCK	SECTOR 17	
1		
	SECTOR 31	
•	•	•
•	•	•
•	• :	•
LOCICAL	SECTOR 15984	
LOGICAL BLOCK	SECTOR 15985	
999		
	SECTOR 15999	

FIG.6 PRIOR ART



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DATA DIVISION

BYTE			·
0~511	DATA	Area	

REDUNDANT DIVISION

BYTE		
512		
513	User Data Area	
514	USEI Data Alea	
515		
516	Data Status Area	
517	Block Status Area	
518	Block Address	
519	Area-1	
520		
521	ECC Area-2	
522		
523	Block Address	
524	Area-2	
525		
526	ECC Area-1	
527		

FIG.7 **PRIOR ART**



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			_			
	PHYSICAL ADDRESS	DATA DIVISION	REDUNDANT DIVISION (LOGICAL ADDRESS)		LOGICAL ADDRESS	LOGICAL ADDRESS
	0	DATA	0	>	0	0
Ī	1	DATA	2		1	3
	2	DATA	3		2	1
	3	DATA	1		3	2
	4	DATA	4	>	4	4
	•	•	•		•	•
	•	•	•		•	•

FIG.8 **PRIOR ART**



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OFFSET / LOGICAL \	PHYSICAL BLOCK			OCK AD Y DATA)	
BLOCK ADDRESS	BLOCK ADDRESS	UPPER	BYTE	LOWER	BYTE
word0(LBA=0)	0	0000	0000	0000	0000
word1 (LBA=1)	500	0000	0001	1111	0100
word2(LBA=2)	327	0000	0001	0100	0111
	•			•	•
word497(LBA=497)	244	0000	0000	1111	0100
word498(LBA=498)	249	0000	0001	1110	1111
word499(LBA=499)	128	0000	0001	1000	0000

FIG.9 PRIOR ART

OFFSET / LOGICAL \	PHYSICAL BLOCK	PHYSICAL BLOCK ADDR (BINARY DATA) UPPER BYTE LOWER B			DRESS
BLOCK ADDRESS	ADDRESS				BYTE
word0(LBA=0)	0	0000	0000	0000	0000
word1 (LBA=1)	1000	0000	0011	1110	1000
word2(LBA=2)	654	0000	0010	1000	1110
	•	•	•	•	•
word997(LBA=997)	488	0000	0001	1110	1000
word998(LBA=998)	498	0000	0001	1111	0010
word999(LBA=999)	256	0000	0001	0000	0000

FIG. 10

PRIOR ART



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		·.
256 + 8 BYTE/PAGE	262 BYTE (EVEN PAGE) 259 BYTE (ODD PAGE)	263 BYTE(EVEN PAGE) 260 BYTE(0DD PAGE)
00	BA7	۵.
<u>D</u>	BA8	BAO
D2	BA9	BA1
D3 D2	BA10	BA2
4	_	BA3
5 D5 D	0	BA4
90	0	BA5
D7	0	BA6

BA10~BA0:LOGICAL BLOCK ADDRESS P EVEN PARITY BIT "1" FIXED VAL



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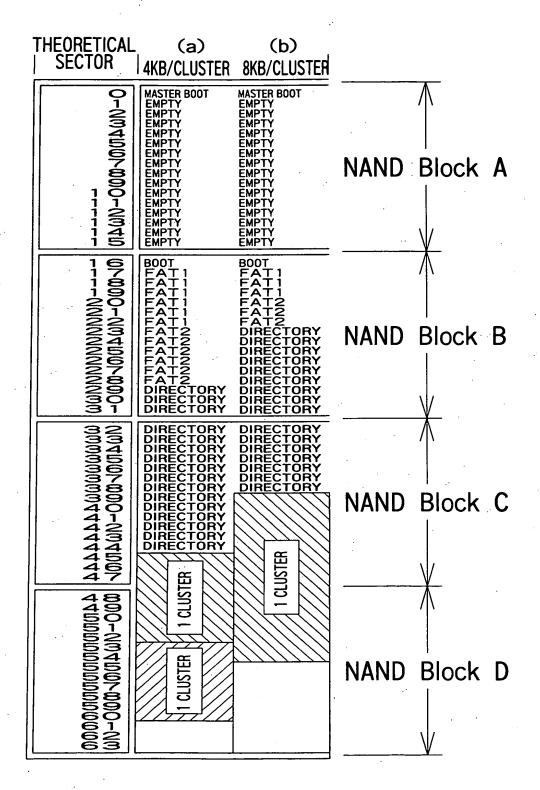


FIG. 12 PRIOR ART

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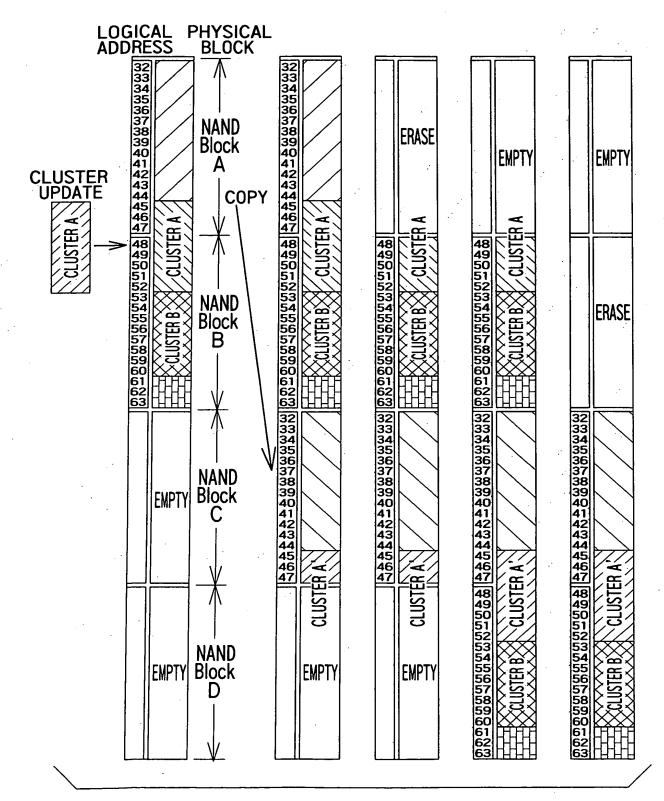


FIG.13 PRIOR ART



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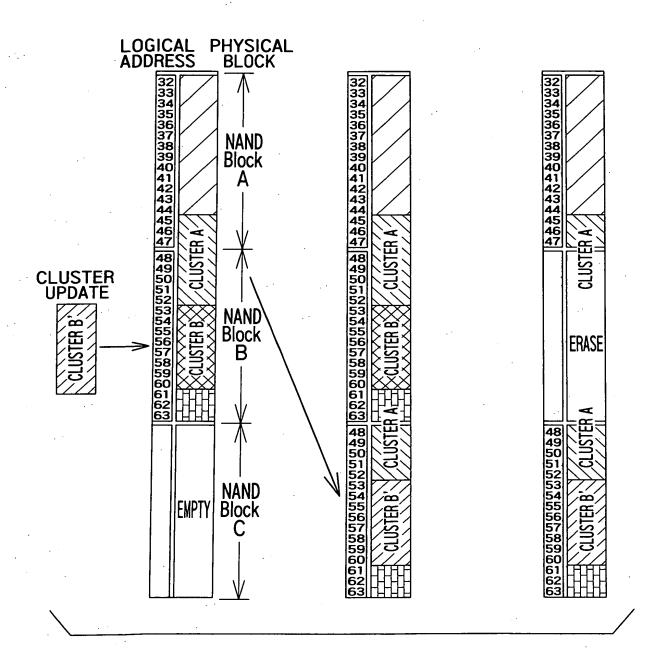


FIG. 14
PRIOR ART



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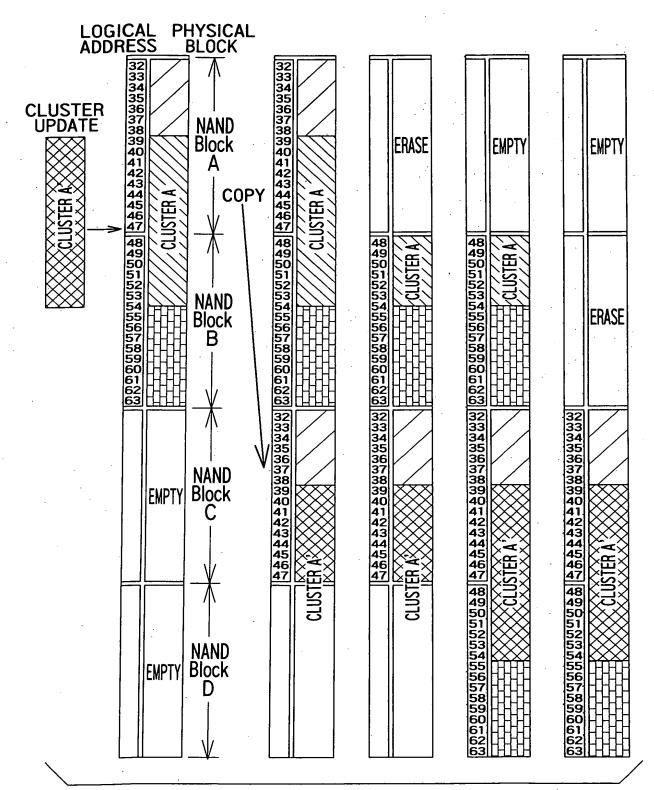


FIG. 15 PRIOR ART



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/			
MANAGEMENT AF	REA N	MANAGEM	MENT AREA
File-1		File-1	del Mark
File-2	_ - File-1,File-4	File-2	
File-3	ERASE	File-3	
File-4		File-4	del Mark
		4	
File-N		File-N	
DATA AREA	_	DATA	AREA
File-1		File	e-1
File-2		File	e-2
File-3	File-3 File-		e-3
File-4		File	e-4
			•
File-N		File	e-N

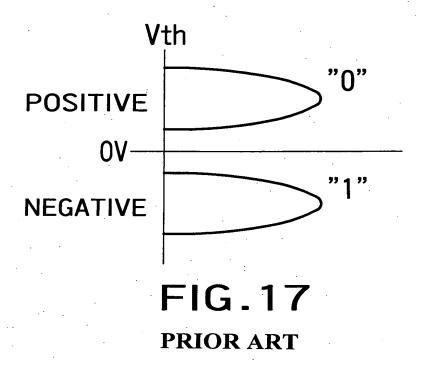
FIG.16 PRIOR ART



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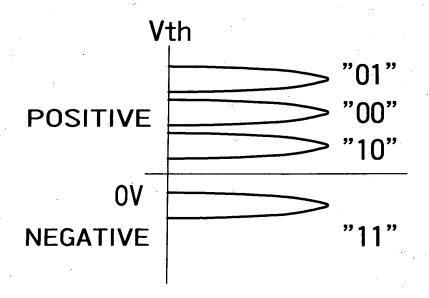


FIG.18 **PRIOR ART**

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	r		
CARD IN FIG.2(b)	VNAVAILABLE	AVAILABLE	
CARD IN FIG.2(a)	AVAILABLE	VNAVAILABLE	FIG. 19 PRIOR ART
	CPU ECC CIRCUIT 1	CPU ECC CIRCUIT 2	



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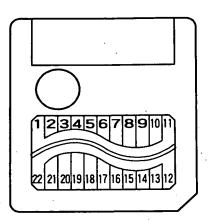


FIG. 20

1,10,11	Vss	POWER SUPPY(GND)
2	CLE	COMMAND LATCH ENABLE
3	ALE	ADDRESS LATCH ENABLE
4	WE	WRITE ENABLE
5	WP	WRITE PROTECT
6-9	I/O ₁₋₄	ADDRESS DATA COMMAND INPUT-OUTPUT PORT
13-16	I/O5-8	ADDRESS DATA COMMAND INPUT-OUTPUT PORT
17	NC	N_C
18	GND	GND LEVEL INPUT
19	R/\overline{B}	READY BUSY OUTPUT
20	RE	READ ENABLE
21	CE	CHIP ENABLE
22,23	Vcc	POWER SUPPY

FIG.21



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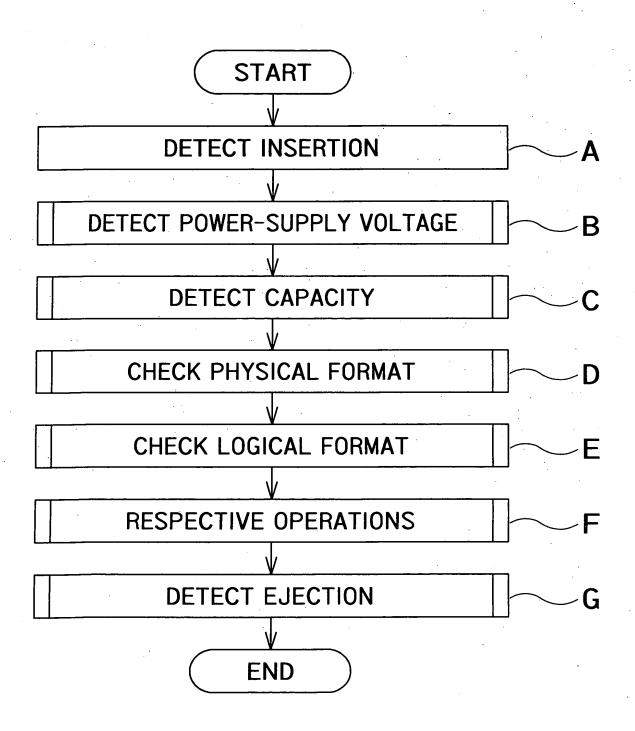


FIG.22

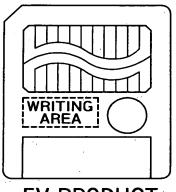


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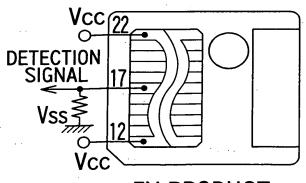
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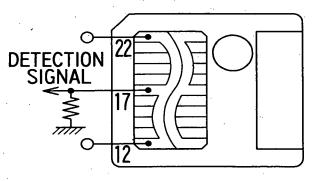
5V PRODUCT FIG.23(a)



3.3V PRODUCT **FIG. 23 (b)**



5V PRODUCT FIG. 24(a)



3.3V PRODUCT **FIG. 24(b)**



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5V DEDICATED CONNECTOR

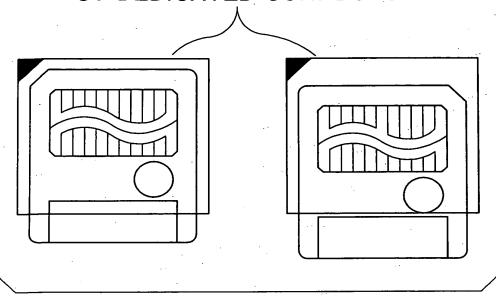


FIG. 25

3.3V DEDICATED CONNECTOR

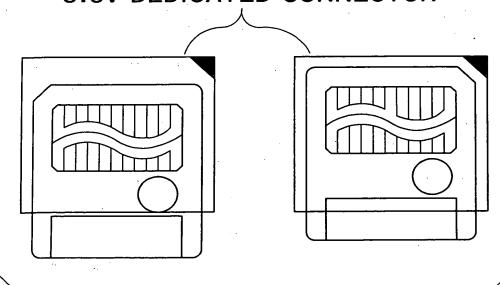


FIG.26



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5V/3.3V DEDICATED CONNECTOR

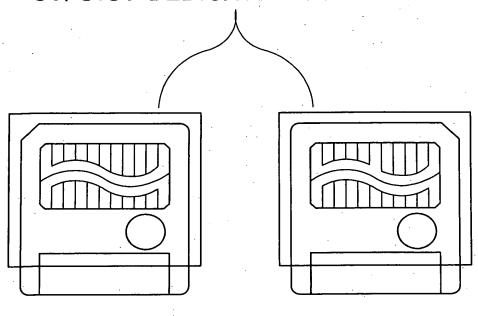


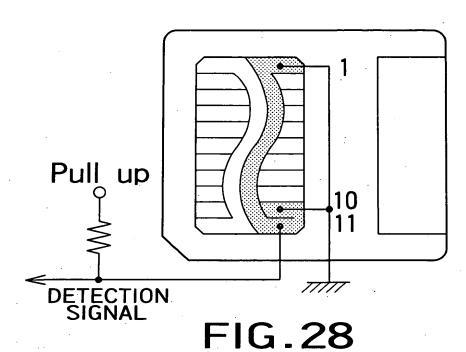
FIG.27



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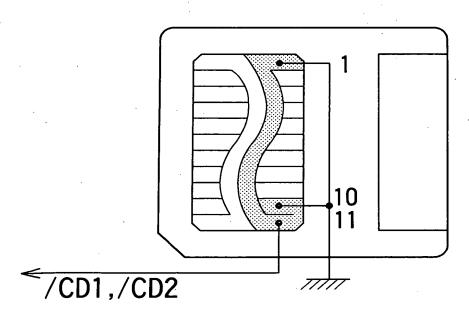


FIG.29



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bit7	bit6	bit1	<u> </u>	bit0	
1stByte	00000000 111	00000000 110		00000000 001	000 0000000
2ndByte	00000000 111	00000001 110		00000001 001	00000001 000
		• •		•	
255thByte	111111110 111	11111110 110		11111110 001	11111110 000
266thByte	11111111 111	11111111 110		11111111 001	11111111 000
į			Ш		

FIG.30

FIG.31

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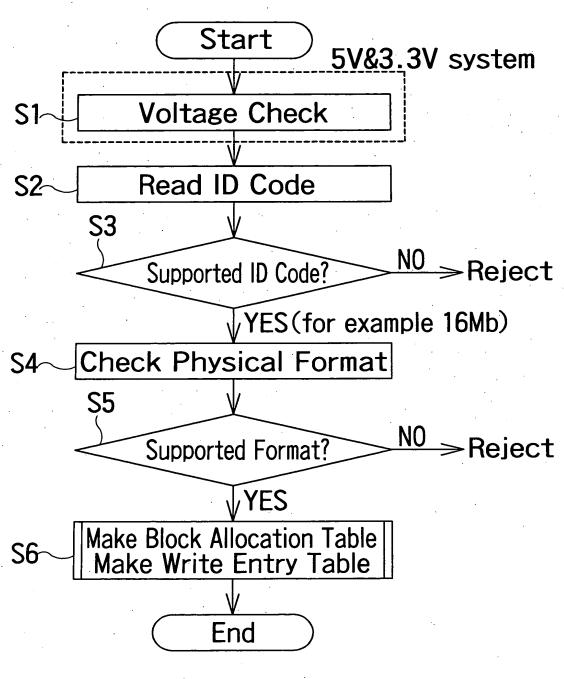


FIG. 32



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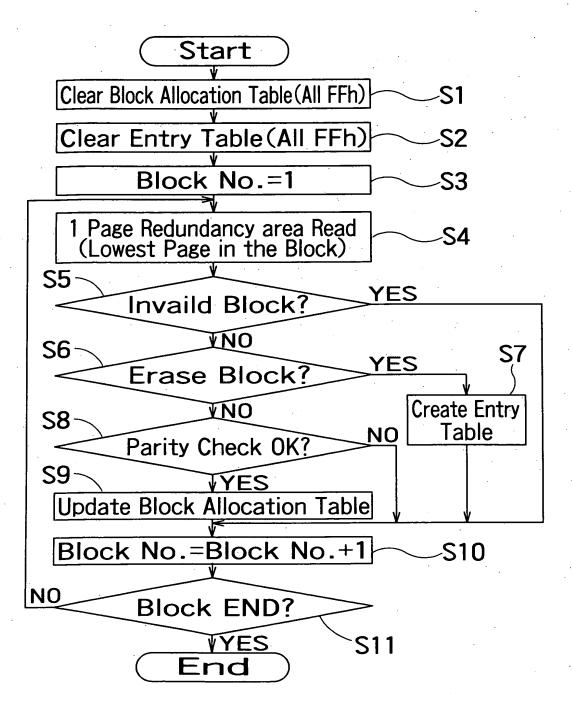


FIG.33



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OFFSET (LOGICAL) BLOCK ADDRESS)	PHYSICAL BLOCK AREA ADDRESS		L BLOCK DDRESS ' DATA)
Word0(LBA=0)	0	0000	0000
Word1 (LBA=1)	250	1111	1010
Word2(LBA=2)	163	1010	0011
•	•	•	•
Word497(LBA=497)	122	0111	1010
Word498(LBA=498)	248	1010	1000
Word499(LBA=499)	64	0100	0000

1 PHYSICAL BLOCK AREA=2 PHYSICAL BLOCK

FIG.34



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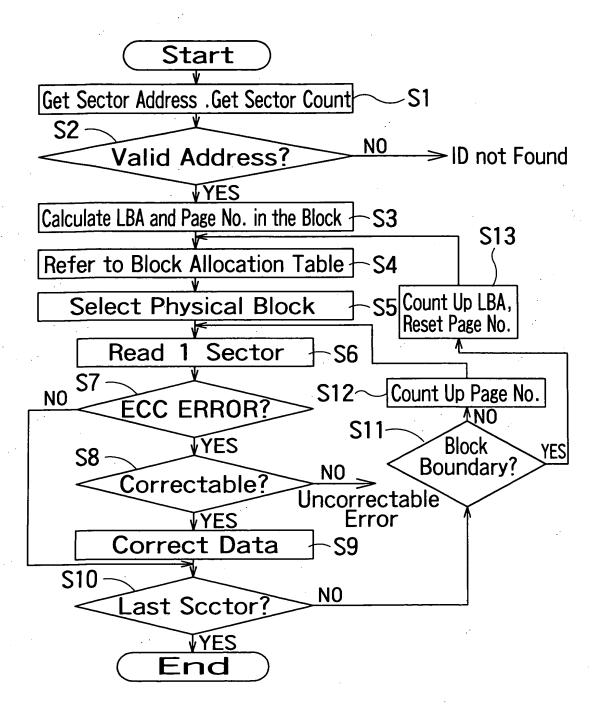


FIG.35



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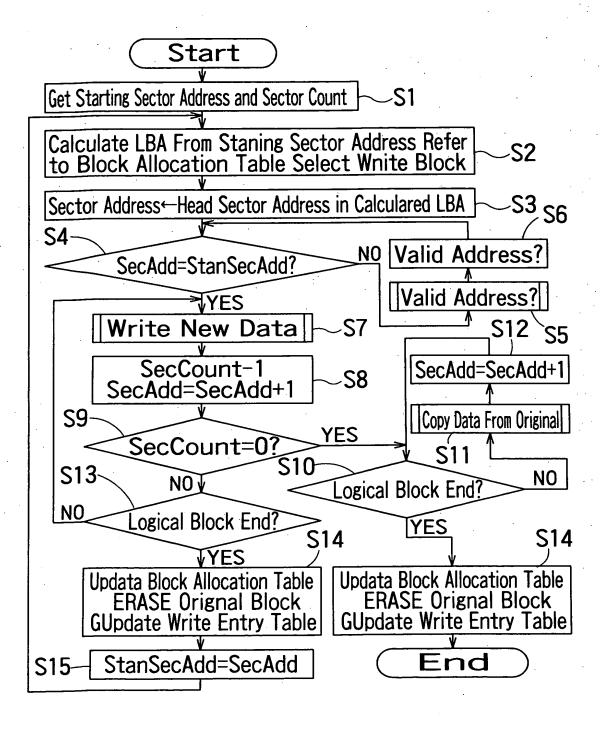


FIG.36



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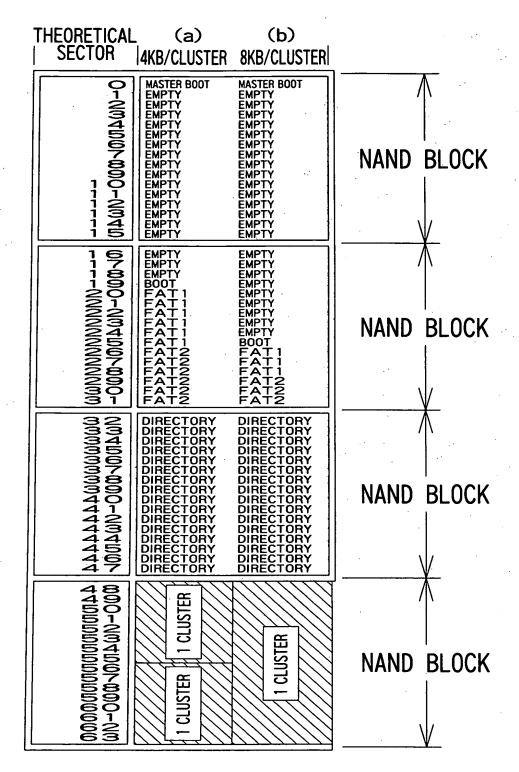


FIG.37



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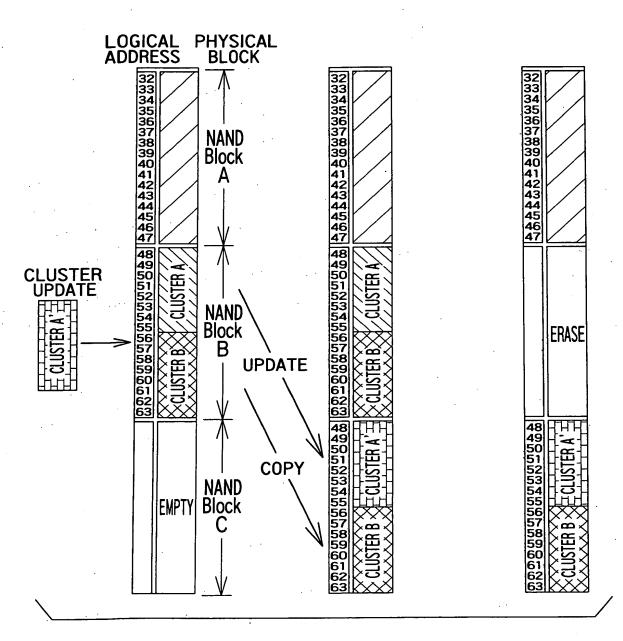


FIG.38



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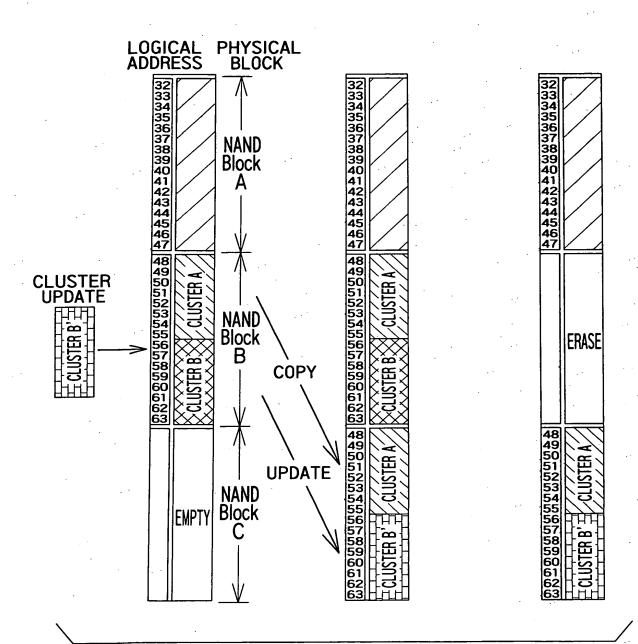


FIG.39



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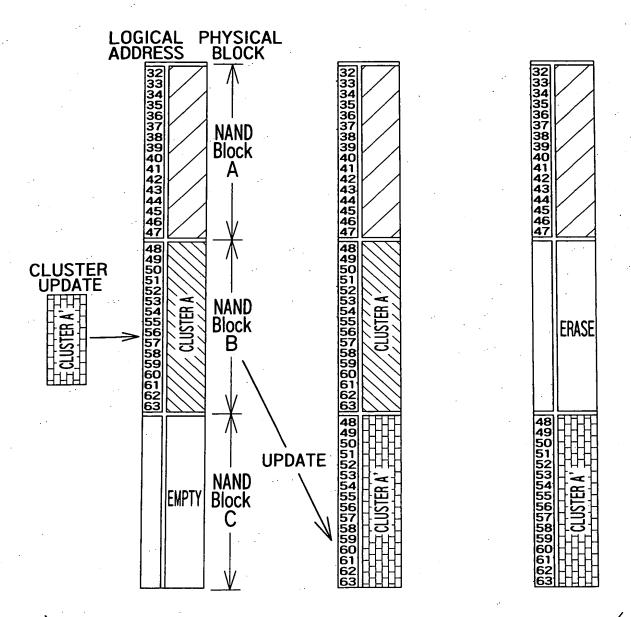


FIG.40



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AAAAA CEMENT AD	-		ACNT ADE/
MANAGEMENT AR	EA N		MENT AREA
File-1		File-1	del Mark
File-2	File-1,File-4	File-2	🔪
File-3	ERASE	File-3	
File-4		File-4	del Mark
		:	
File-N		File-N	
DATA AREA		DATA	AREA
File-1		Era	sed
File-2		File	e-2
File-3		File	e-3
File-4		Era	sed
File-N		File	e-N

FIG.41



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OFFSET / LOGICAL \	(PHYSI	CAL BL	OCK ADDI	RESS)
ADDRESS)	Upper	Byte	Lower	Byte
Word0(LBA=0)	Physical Upper A		Physical Lower Ad	Block dress
Word1 (LBA=1)	Physical Upper A	l Block ddress	Physical Lower Ad	Block dress
Word2(LBA=2)	Physical Upper A	Block ddress	Physical Lower Ad	
•				
Word247(LBA=247)	Physical Upper A	l Block ddress	Physical Lower Ac	Block Idress
Word248(LBA=248)	Physical Upper A		Physical Lower Ac	
Word249(LBA=249)	Physical Upper A	l Block ddress	Physical Lower Ac	Block Idress

FIG.42(a)

OFFSET / LOGICAL \	(PHYSICAL BL	OCK ADDRESS)
ADDRESS	Upper Byte	Lower Byte
Word0(LBA=250)	Physical Block Upper Address	Physical Block Lower Address
Word1 (LBA=251)	Physical Block Upper Address	Physical Block Lower Address
Word2(LBA=252)	Physical Block Upper Address	Physical Block Lower Address
Word247 (LBA=497)	Physical Block Upper Address	Physical Block Lower Address
Word248(LBA=498)	Physical Block Upper Address	Physical Block Lower Address
Word249(LBA=499)	Physical Block Upper Address	Physical Block Lower Address

FIG.42(b)



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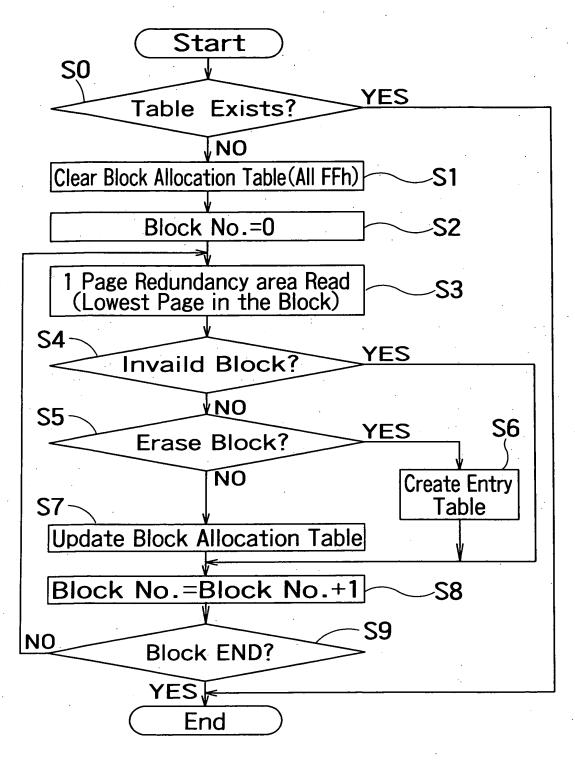


FIG.43



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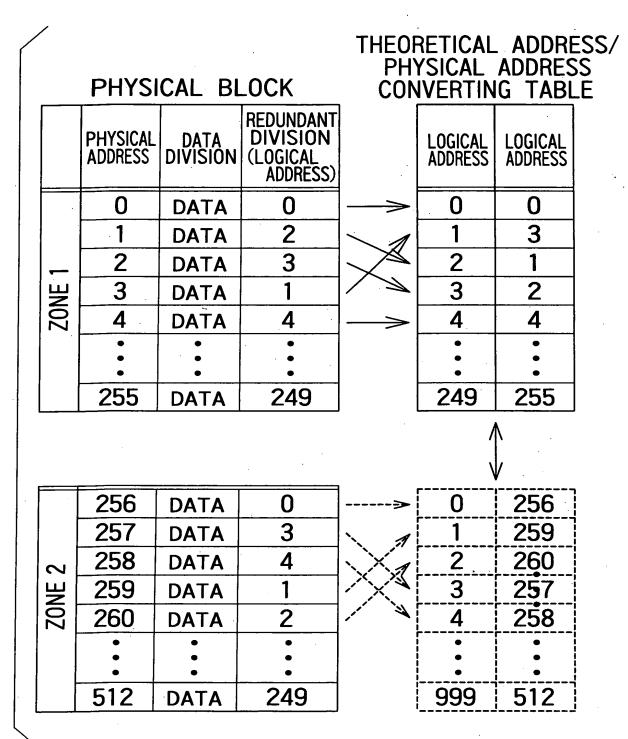


FIG.44



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Word2 (LBA=2) 227 0000 1110 001 : : : : : : : : : : : : : : : : : : :					:	· · · · · · · · · · · · · · · · · · ·
Word2 (LBA=2) 227 0000 1110 001 : : : : : : : : : : : : : : : : : : :		(LOGICAL)	BLOCK	Α[DDRESS	
Word254 (LBA=254) 244 0000 1111 010		Word0 (LBA=0)	0	0000	0000	0000
		Word2 (LBA=2)	227	0000	1110	0011
		•	•		•	•
Word255 (LBA=255) 128 0000 1000 01		Word254 (LBA=254)	244	0000	1111	0100
		Word255 (LBA=255)	128	0000	1000	0111
Word256 (LBA=256) 256(256-256=0) OOOO OOO		Word256 (LBA=256)	256 (256-256=0)	0000	0000	0000
Word257 (LBA=257) 327(327-256=71) OOO O1 O1		Word257 (LBA=257)	327(327-256=71)	0000	0100	0111
	7 [7 [•	•		•	•
Word499 (LBA=499) 500(500-256=244) OOOO\ 1110 OO		Word499 (LBA=499)	500(500-256=244)	0000	1110	0000
Word500 (LBA=500) 428(428-256=172) OOOO \ 1010 110	V	Word500 (LBA=500)	428(428-256=172)	0000	1010	1100

FIG.45



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BEFORE REPLACEMENT OF BLOCK

PHYSICAL BLOCK ADDRESS

	- ADDITEOU					
		0	Block0 data area			
		1	Block1 data area			
NG		2	Block2 data area			
	1	3	Block3 data area			
		4	Block4 data area			
	ZONE	5	Block5 data area			
NG	7	6	Block6 data area			
			:			
		128	Block128 data area			
NG		129	Block129 data area			
	7	130	Block130 data area			
NG	ш	131	Block131 data area			
NG	Z	132	Block132 data area			
	ZONE	133	Block133 data area			
	17					
			•			
		256	Block256 data area			
	3	257	Block257 data area			
		258	Block258 data area			
	ш	259	Block259 data area			
	Z	260	Block260 data area			
	NOZ	261	Block261 data area			
,	ZONE					
	NOZ	261	Block261 data area			
	NOZ	261	Block261 data area			
NG		261 262 :	Block261 data area Block262 data area			
NG	4	261 262 : : 384	Block261 data area Block262 data area Block384 data area			
NG	4	261 262 :: 384 385	Block261 data area Block262 data area Block384 data area Block385 data area			
NG	4	261 262 :: 384 385 386	Block261 data area Block262 data area Block384 data area Block385 data area Block386 data area			
NG	4	261 262 384 385 386 387	Block261 data area Block262 data area Block384 data area Block385 data area Block386 data area Block387 data area			
		261 262 384 385 386 387 388	Block261 data area Block262 data area Block384 data area Block385 data area Block386 data area Block387 data area Block388 data area			

PHYSICAL BLOCK ADDRESS

AFTER REPLACEMENT OF BLOCK

ANDRE22			
		0	Block0 data area
		1	Block1 data area
	_	2	Block2 data area
	111	3	Block3 data area
	ZONE	4 5	Block4 data area
	0	6	Block5 data area
	7	6	Block6 data area
		128	Block128 data area
	<u> </u>	129	Block129 data area
-:	2	130	Block130 data area
	当	131	Block131 data area
NG		132	Block132 data area
	ZONE	133	Block133 data area
	•		:
ı		-	•
		256	Block256 data area
	3	257	Block257 data area
		258	Block258 data area
	ZONE	259	Block259 data area
		260	Block260 data area
)7	<u> 261</u>	Block261 data area
		262	Block262 data area
		:	
			•
		384	Block384 data area
NG	₩	385	Block385 data area
	4	386	Block386 data area
	"	387	Block387 data area
	ZONE	388	Block388 data area
NG)	389	Block389 data area
i		:	: !

REDUNDANT BLOCK

•

REDUNDANT BLOCK

2	Block2 data area
5	Block5 data area
129	Block129 data area
131	Block131 data area

FIG.46



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BEFORE REPLACEMENT OF BLOCK

AFTER REPLACEMENT OF BLOCK

PHYSICAL BLOCK

- 1	ADDRES	SS
NG	0	Block0 data area
	1	Block1 data area
NG	2	Block2 data area
	3	Block3 data area
	4	Block4 data area
NG	5	Block5 data area
NG	6	Block6 data area
	7	Block7 data area
	8	Block8 data area
NG	9	Block9 data area
	10	Block10 data area
NG	11	Block11 data area
	12	Block12 data area
	13	Block13 data area
	14	Block14 data area
	:	
		Pl-sl-2FC data assa
NG	256	Block256 data area
	257	Block257 data area Block258 data area
	258	
NG	259	Block259 data area
	260	Block260 data area Block261 data area
NG	261	Block262 data area
	262	
	263	Block263 data area
NG	264	Block264 data area
NG	265	Block265 data area
	266	Block266 data area
	267	Block267 data area
	268	Block268 data area
NG	269	Block269 data area
		:

PHYSICAL BLOCK ADDRESS

	4DDKE3					
	0	Block® data area	REDUNDANT	BLOCK A	HARDWARE	REDUNDANT
	1	Block1 data area	<i>:</i>			
	2	Block2 data area	REDUNDANT	BLOCK V	HARDWARE	REDUNDANT
	3	Block3 data area				
	4	Block4 data area				
	5	Block5 data area	REDUNDANT	BLOCK V	HARDWARE	REDUNDANT
	6	Block6 data area	ļ.			
	7	Block7 data area				•
	8	Block8 data area				
	9_	Block9 data area				
	10	Block10 data area	 			DED.
	1	Block11 data area	REDUNDANT	BLOCK V	HARDWARE	REDUNDANT
	12	Block12 data area	[
	13	Block13 data area				•
	14	Block14 data area				
	<u></u>	PI 1050 1 1	1			
NG	256	Block256 data area	,			
	257	Block257 data area	Į.			
NC	258	Block258 data area	ł [']			
NG	259	Block259 data area				•
NG	260	Block260 data area Block261 data area	1		•	
NG	261	Block262 data area	1			•
	262 263	Block263 data area	1			
NG	264	Block264 data area	1			•
NG	265	Block265 data area	1			
NG		Block266 data area	-			
	266 267	Block267 data area	1			
•	268	Block268 data area	1			
NG	269	Block269 data area	1			
NG	-09	•	1			•

REDUNDANT BLOCK

REDUNDANT BLOCK

0	Block0 data area
2	Block2 data area
4	Block4 data area
5	Block5 data area
9	Block9 data area
11	Block11 data area

FIG.47



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BEFORE REPLACEMENT OF BLOCK

PHYSICAL BLOCK ADDRESS

		0	Block0 data area
		1	Block1 data area
NG	_	2	Block2 data area
	ш	3	Block3 data area
	Z	4	Block4 data area
	ZONE	5	Block5 data area
NG	17	6	Block6 data area
		128	Block128 data area
NG	ا ہا	129	Block129 data area
	7	130	Block130 data area
NG	ZONE	131	Block131 data area
NG		132	Block132 data area
		133	Block133 data area
		:	
		256	Block256 data area
		257	Block257 data area
	3	258	Block258 data area
	ш	259	Block259 data area
	ZONE	260	Block260 data area
	0	261	Block261 data area
	7	262	Block262 data area
			:
		384	Block384 data area
NG		384 385	:
NG	4		Biock384 data area
NG	VE 4	385 386 387	Block384 data area Block385 data area Block386 data area Block387 data area
	ONE 4	385 386 387 388	Biock384 data area Biock385 data area Biock386 data area
NG NG	ZONE 4	385 386 387	Block384 data area Block385 data area Block386 data area Block387 data area
	Z0NE 4	385 386 387 388	Błock384 data area Block385 data area Block386 data area Block387 data area Block388 data area

REDUNDANT BLOCK

 · · · · · ·	
 	

AFTER REPLACEMENT OF BLOCK

PHYSICAL BLOCK ADDRESS

	•	ADDUCS	<u>. </u>
- [0	Block0 data area
1		1	Block1 data area
	-	2	Block2 data area
	ш	3	Block3 data area
	Z	4	Block4 data area
NG	ZONE	4 5 6	Block5 data area
	7	6	Block6 data area
			:
		•	
		128	Block128 data area
	2		Block129 data area
		130	Block130 data area
	"	131	Bleck131 data area
NG		132	Block132 data area
	ZONE	133	Block133 data area
			•
		•	•
-		256	Block256 data area
		257	Block257 data area
	3	258	Block258 data area
	ш	259	Block259 data area
	Z	260	Block260 data area
	ZONE	261	Block261 data area
	17	262	Block262 data area
		384	Block384 data area
		385	Block385 data area
	4	386	Block386 data area
	Щ	387	Block387 data area
		388	Block388 data area
NG	ZONE	389	Block389 data area
	. 7	:	
	l		

REDUNDANT BLOCK

	129	Block129data area
	131	Block131 data area
	2	Block2 data area
ı	385	Block385 data area

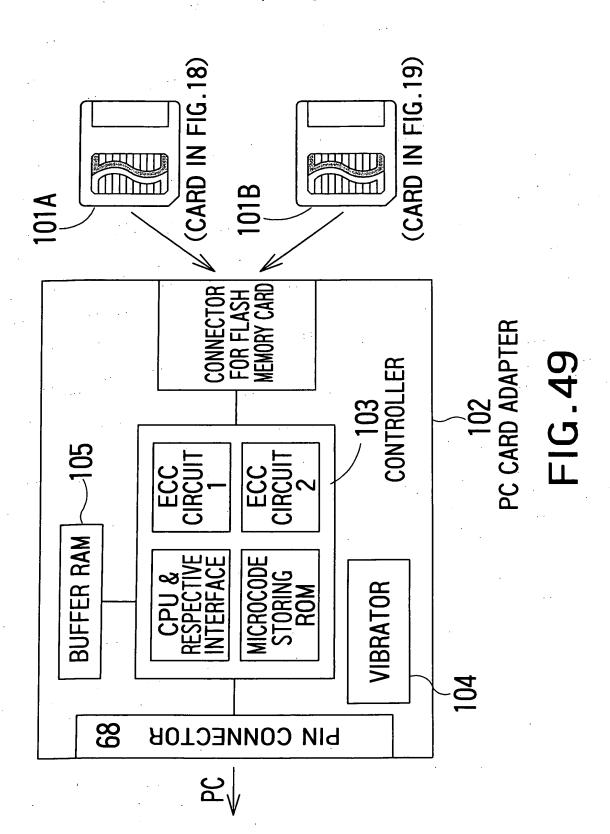
FIG.48



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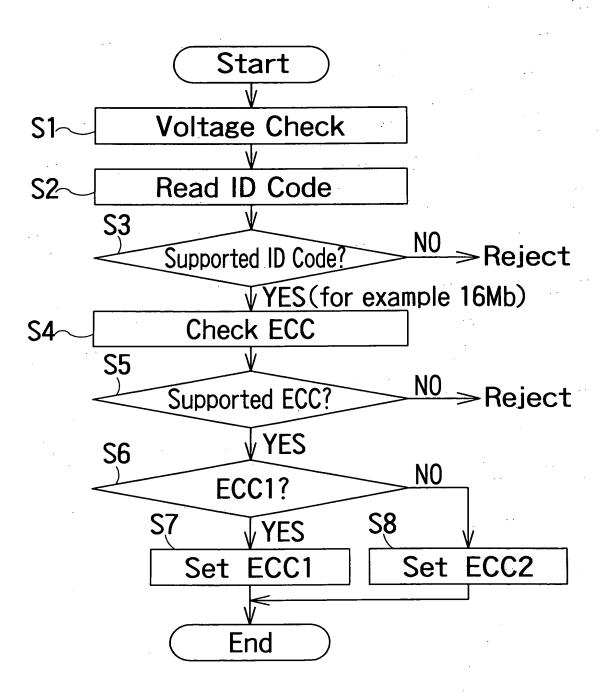


FIG.50



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DATA DIVISION

BYTE	PAGE 0(EVEN PAGE)	PAGE 1 (ODD PAGE)
0~255	DATA Area-1	DATA Area-2

REDUNDANT DIVISION

BYTE	EVEN PAGE	ODD PAGE
256	ECC Flag Area	
257		ECC Area-2
258	ECC Area-3	
259	·	Block Address
260	Data Status Area	Area-2
261	Block Status Area	••
262	Block Address	ECC Area-1
263	Area-1	

FIG.51



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	ECC-AREA1	ECC-AREA2	ECC-AREA1 ECC-AREA2 ECC-AREA3 ECC-AREA4	ECC-AREA4
ECC ETHOD 1	ECC CODE ECC CODE NULL FOR DATA AREA-2 (ALL"FFh")	ECC CODE FOR DATA AREA-2	NULL (ALL"FFh")	ECC1-FLAG
ECC ETHOD 2	ECC CODE ECC CODE ECC CODE FOR FOR FOR DATA AREA-1,2 DATA AREA-1,2	ECC CODE FOR DATA AREA-1,2	ECC CODE FOR DATA AREA-1,2	ECC2-FLAG